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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,195	04/02/2004	Maria Clemens Y. Quinones	018865-014800US	2168

20350 7590 10/24/2005

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EXAMINER	
LEE, PATRICK J	

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/817,195	QUINONES ET AL.	
	Examiner	Art Unit	
	Patrick J. Lee	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☒ Claim(s) *8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12132004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Label "20" in figure 1 is not described in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 8 objected to because of the following informalities:

Claim 8 lacks appropriate claim dependency. For purposes of examination, it will be assumed that claim 8 is dependent on claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4-6, 8-9, & 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,114,177 to King.

With respect to claim 1, King discloses an optically coupled device comprising: a substrate comprising metallic bonding pads (13, 17) as part of a single planar lead frame (11) as a lead frame and polymeric material mass (26) as a molding compound; light emitting diode (12) as an optical emitter; photodetector (16) as a optical receiver, where both optical emitter (12) and optical receiver (16) are electrically coupled to metallic bonding pads (13, 17) and planar lead frame (11); and transparent polymeric material (20) as an optically transmissive medium disposed between the optical receiver and the optical emitter.

With respect to claim 4, King discloses the use of wire bonds (14) to couple the optical components to the lead frame.

With respect to claim 5, figures 1 & 4-5 of King illustrate lead frame (11) as having both etched and non-etched portions where the non-etched portions would be covered by polymeric material mass (26).

With respect to claim 6, King discloses the frame to comprise copper (see column 2, lines 21-24).

With respect to claim 8, figures 1 & 4-5 of King illustrate lead frame (11) as having both etched and non-etched portions where the non-etched portions would be covered by polymeric material mass (26).

With respect to claim 9, King discloses an optically coupled device comprising: a substrate comprising metallic bonding pads (13, 17) as part of a single planar lead frame (11) as a lead frame and polymeric material mass (26) as a molding compound; light emitting diode (12) as an optical emitter; photodetector (16) as a optical receiver, where both optical emitter (12) and optical receiver (16) are electrically coupled to metallic bonding pads (13, 17) and planar lead frame (11); and transparent polymeric material (20) as an optically transmissive medium disposed between the optical receiver and the optical emitter.

With respect to claim 11, figures 1 & 4-5 of King illustrate lead frame (11) as having both etched and non-etched portions where the non-etched portions would be covered by polymeric material mass (26).

With respect to claim 12, King discloses the frame to comprise copper (see column 2, lines 21-24).

With respect to claim 13, King discloses the use of wire bonds (14) to couple the optical components to the lead frame.

With respect to claim 14, King discloses the disposition of polymeric material (26) on top of transparent material (20) to prevent ambient light to be incident onto photodetector (16) (see column 2, lines 58-66). King discloses the covering of a reflective coating in column 1, lines 38-40.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 7 & 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,114,177 to King.

King discloses the invention as described in the discussion of claims 1, 4-6, 8-9, & 11-14.

With respect to claims 7 & 15, King does not explicitly disclose the use of plurality of optocouplers on a substrate, but does suggest that there are more than one optocoupler on lead frame (11) by stating that there are "at least one semiconductor element adapted for absorbing such electromagnetic radiation and producing an electrical output signal" (see column 2, lines 13-16). Even if this does not suggest the

use of a plurality of optocouplers, such would have been a mere matter of obvious duplication of parts because such would allow for additional capability of the device and efficient use of the frame (11).

With respect to claim 16, King discloses an optically coupled device comprising: a substrate comprising metallic bonding pads (13, 17) as part of a single planar lead frame (11) as a lead frame and polymeric material mass (26) as a molding compound; light emitting diode (12) as an optical emitter; photodetector (16) as a optical receiver, where both optical emitter (12) and optical receiver (16) are electrically coupled to metallic bonding pads (13, 17) and planar lead frame (11); and transparent polymeric material (20) as an optically transmissive medium disposed between the optical receiver and the optical emitter. King does not explicitly disclose the use of plurality of optocouplers on a substrate, but does suggest that there are more than one optocoupler on lead frame (11) by stating that there are "at least one semiconductor element adapted for absorbing such electromagnetic radiation and producing an electrical output signal" (see column 2, lines 13-16). Even if this does not suggest the use of a plurality of optocouplers, such would have been a mere matter of obvious duplication of parts because such would allow for additional capability of the device and efficient use of the frame (11).

With respect to claim 17, the modified King discloses lead frame (11) with etched portions (see figures 1 & 4-5).

With respect to claim 18, the modified King discloses the frame to comprise copper (see column 2, lines 21-24).

With respect to claims 19-20, the modified King discloses the use of semiconductor elements (12, 16) as the light emitting diode and the photodetector, but does not explicitly disclose them to be of a MOSFET structure. However, such would have been obvious to one of ordinary skill in the art as allowing for desired performance at a lower cost.

8. Claims 2-3 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,114,177 to King in view of US 6,324,072 B1 to Lorenz et al.

King discloses the invention as described in the discussion of claims 1, 4-6, 8-9, & 11-14.

With respect to claims 2-3 & 10, King does not explicitly disclose the use of conductive structures coupled to the lead frame. However, Lorenz et al disclose such through the use of electrically conductive balls (8). To modify the teachings of King with those of Lorenz et al would have been obvious to one of ordinary skill in the art because it would allow for ease of installation and additional electrical processing capabilities.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,342,670 B1 to Lin et al discloses a photoelectric module device.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J. Lee
Examiner
Art Unit 2878

PJL
October 19th, 2005

Stephone B. Allen
Primary Examiner